

In 1972 Mike Reynolds, '69 graduate of the University of Cincinnati began to pioneer a new way to create sustainable housing. The premise for his houses was originally to build house from recycled and natural materials. They ended up being self-sustained housing with no need for heat, air conditioning, water supply and eventually were designed with the use of solar and wind energy to have no need for outside power. The idea of these houses was to live off the grid or without any input from outside sources.

It would seem that houses of this sort would not be feasible in every climate however they have been proven to work in many different climates. Michael Reynolds began building these homes in New Mexico. This is not hard to imagine because it is warm most of the year and doesn't have harsh winters. However when considering Ithica, New York there can be harsh and very cold winter that in normal houses, you wouldn't survive without some source of heat. Chad and Courtney DeVoe have recently built an earthship.

Earthships are built from recycled materials and are built in a way that allow nature to regulate the temperature and provide the basic needs of their inhabitants. In the northern hemisphere there is typically on large glass wall that is oriented to the south. This allows the house to absorb the maximum amount of sunlight. The glass is angled such that in the winter when the sun is low in the sky the house will receive the most amount of light. This light is directed back into the house and against the wall. The walls are made from old tires that are packed tight with dirt. The dark rough nature of the tires acts to absorb the light energy while the mass of dirt within the tires stores the heat. This heat is stored during the day and dissipated at night to keep the house at a comfortable temperature. Also located directly inside the wall of window there is typically an approximately three foot wide row of vegetation that can be grown all year round. In the summer time because of the angle of the wall of windows, light is cast into the house only over that three feet that is covered in vegetation. This way the plants get the light and heat needed to live and the house is exposed to less light. Above the plants there are vent doors that can be opened to let hot air out of the house. The backside of the house is covered by dirt and is essentially underground. From vents in the back wall pipes are run underground and vented above ground outside, behind the house. When the vents above the plants are opened a natural convection process begins. As the hot air rises out of the house through the vent air is drawn through the underground pipes and into the house. Since the pipes are buried where the temperatures underground remain constant at 55 degrees Fahrenheit the air that is drawn into the house is cool. This acts as a natural air conditioning in the summer.

There are water catchment devices implemented in several different ways. The gutter system on the roof of the house collects and stores the water. Ground water drains can also be installed to supply additional water. The water is stored in a tank and pumped as needed. The Water for showing and sink use is only filtered less than the drinking water to conserve energy. The power for these homes is typically produced using solar cells. The energy not used is stored in battery banks for use when the cells are not producing energy. Some earthships have implemented wind turbines with great success.

Earthships are a great way to live in a sustainable way. They allow you to live free from the demand for energy produced by the burning of fossil fuels and away from the poor agricultural and farming practices of today's high demand market. I believe earthships are an incredible step in the direction of a sustainable future.

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